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United States  
Department of  
Agriculture

Soil  
Conservation  
Service

Spokane,  
Washington



# Washington Water Supply Outlook

APRIL 1, 1987



# Foreword

## How Forecasts Are Made

Most of the annual streamflow in the Western United States originates as snowfall. This snowfall accumulates high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are viewed in conjunction with snowpack data to prepare runoff forecasts. This report presents a comprehensive picture of water supply outlook conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data and narratives describing current conditions.

Streamflow forecasts are cooperatively generated by Soil Conservation Service and National Weather Service hydrologists. Forecasts become more accurate as more data affecting runoff becomes known. For this reason, forecasts are issued that reflect three future precipitation conditions — Below Normal, Average, and Above Normal. These forecasts are termed reasonable minimum, most probable, and reasonable maximum. Actual streamflow can be expected to fall between the lower and upper forecast values eight out of ten years.

Snowpack data are obtained by using a combination of manual and automated measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation, temperature, and other parameters are monitored on a daily basis and transmitted via radio telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

## For More Information

Copies of Monthly Water Supply Outlook Reports and other reports may be obtained from the states listed below. Because of the limited space, snow survey measurements are not published in monthly reports. An annual snow survey data summary is published by the Soil Conservation Service for each of the western states. Historical snow survey data may be obtained at those same offices.

STATE	ADDRESS
Alaska	201 East 9th Ave., Suite 300, Anchorage, AK 99501-3687
Arizona	201 East Indianola, Suite 200, Phoenix, AZ 85012
Colorado	2490 West 26th Ave., Denver, CO 80211
New Mexico	517 Gold Ave. S.W., Room 3301, Albuquerque, NM 97102
Idaho	304 North 8th Street, Room 345, Boise, ID 83702
Montana	10 East Babcock, Room 443, Federal Building, Bozeman, MT 59715
Nevada	1201 Terminal Way, Room 219, Reno, NV 89502
Oregon	1220 Southwest 3rd Ave., Room 1640, Portland, OR 97208
Utah	4402 Federal Building, 125 South State Street, Salt Lake City, UT 84147
Washington	360 U.S. Court House, Spokane, WA 99201
Wyoming	Federal Building, 100 East "B" Street, Casper, WY 82601

In addition to state reports, a Water Supply Outlook for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 547, Portland, OR 97209.

Published by other agencies:

Water Supply Outlook Reports prepared by other agencies include: California — Snow Survey Branch, California Department of Water Resources, P.O. Box 388, Sacramento, CA 95802; British Columbia — The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory — Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta, Environment Technical Services Division, 9820 106th St., Edmonton, Alberta T5K 2J6.

# **Washington Water Supply Outlook**

and

## **Federal — State — Private Cooperative Snow Surveys**

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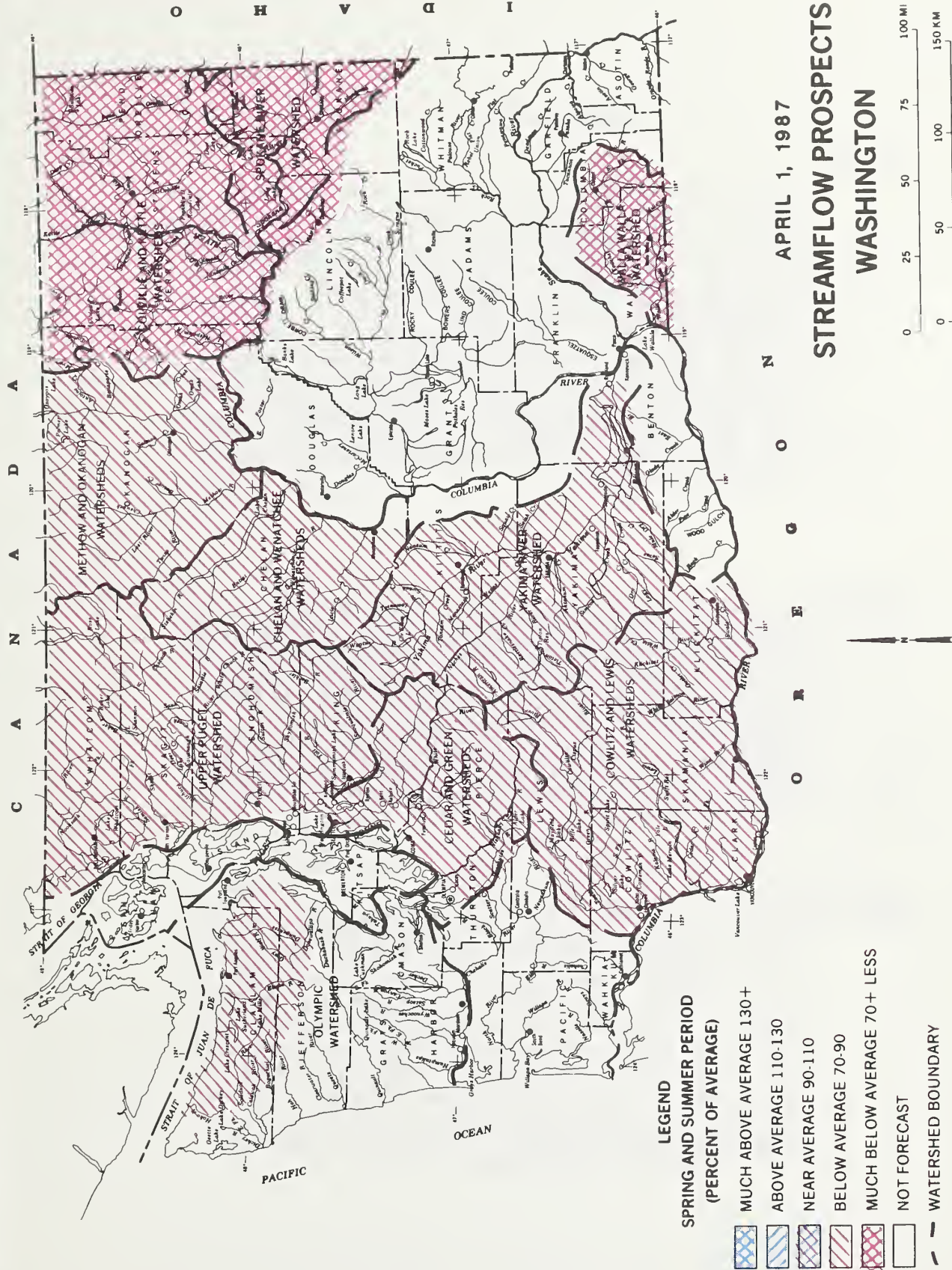
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SOURCE: Data compiled by SCS  
Field Personnel

## GENERAL OUTLOOK

### SUMMARY:

Above normal temperature in March eliminated much of the low elevation snowpack in Washington. Reservoir storage, while somewhat improved, remains below normal at the major irrigation projects throughout the state. Washington's April water supply forecasts indicate below normal runoff for 1987 in eastern Washington. Western Washington and the east side of the Cascade mountains will be near normal for the summer months. Snow cover and precipitation continue to be below average. March streamflows were above average except in south west Washington. This issue contains water conservation ideas for irrigators on page 25.

### SNOWPACK:

Eastern Washington continues to be much below average with the Spokane Basin at 68% of normal, and the Colville-Pend Oreille River at 73% of average. The eastern slopes of the Cascade Mountains remain much the same as last month with the Wenatchee-Chelan Basin at 88%, and the Yakima Basin at 79%. Along the west slopes of the Cascades the Lewis and Cowlitz Basin is at 86% and the Skagit and Olympic at 76% of normal.

### PRECIPITATION:

Precipitation data from the National Weather Service (NWS) show March with much above average over most of Washington. The Pend Oreille Basin with 196% of normal led the way followed by Spokane with 162%, Okanogan at 140% and the Cowlitz-Lewis Basin with 136%. The Walla Walla Basin with 81% of average for March was low for Washington but maintained the water year to date lead with 98% of normal. March precipitation values from SNOTEL sites indicate a water year value near 80% of average for the high mountain areas of Washington.



#### RESERVOIRS:

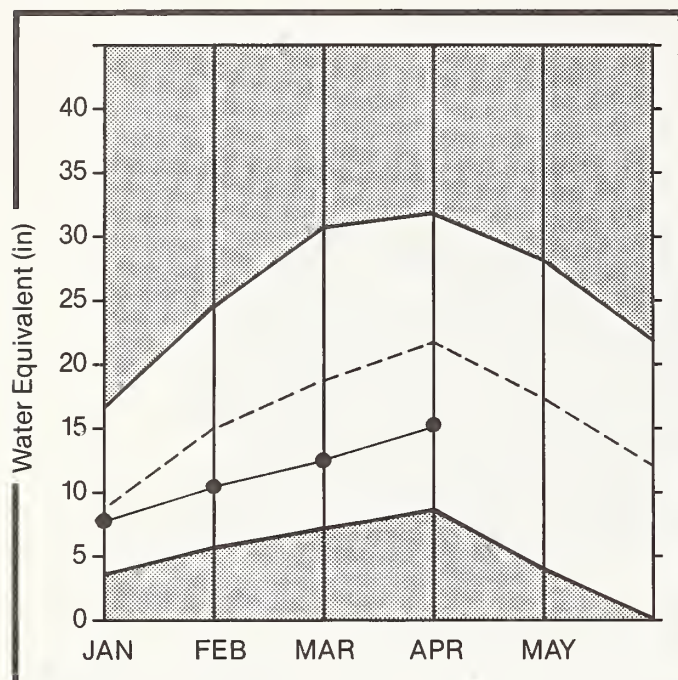
Reservoir storage in the Yakima Basin with April 1 storage of 524,800 acre feet is at 71% of average, up from 56% last month. Other major irrigation reservoir storage remains good in Washington for April 1, with Roosevelt at 286% of normal, Banks Lake at 109% and the Okanogan at 99% of average. The power reservoirs contain the following: Coeur d' Alene Lake 186,200 acre feet or 64% of capacity, Chelan Lake 125,200 acre feet at 19% of capacity and and Ross Lake at 579,700 acre feet or 41% of capacity.

#### STREAMFLOW:

March streamflows were above average over most of Washington. The west side of the Cascade Mountains experienced spring runoff with the Cowlitz at 161%, the Chehalis at 150%, and the Skagit at 138% of normal. The east slope of the Cascades runoff was high with the Yakima at 114%, Wenatchee at 122%, and the Okanogan at 126% of average. The Columbia River was 121% at Grand Coulee and 126% at Priest Rapids. In eastern Washington, the Spokane streamflow was 117% of normal and the Pend Oreille 113%. Forecasts for streamflows for the western portion of Washington state remain almost the same as last month, which is below normal. Forecasts vary from 60% in the Spokane River to 89% in the Lewis River.

# SPOKANE

**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum



Average



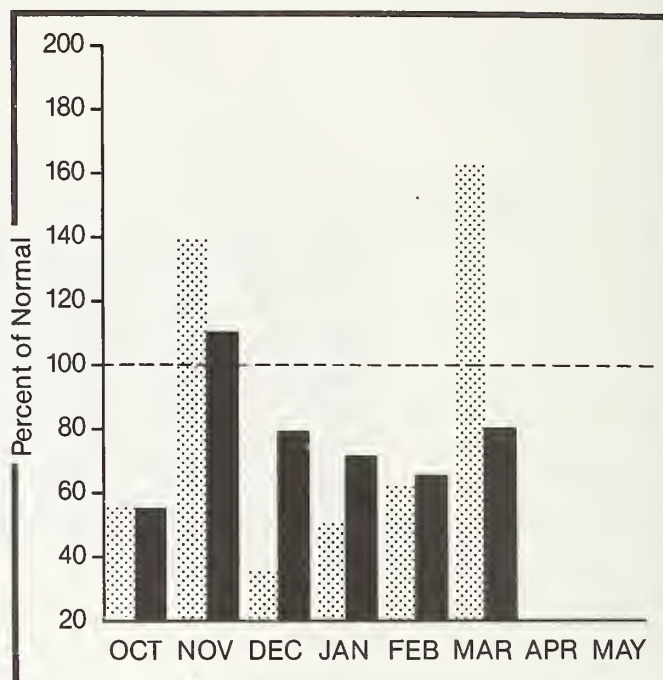
Minimum



Current



**Precipitation\*** (percent of normal)

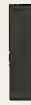


\*Based on selected stations

Monthly precipitation



Year to date precipitation



## SPOKANE RIVER BASIN

### WATER SUPPLY OUTLOOK:

March streamflow on the Spokane River was 117% of average at Spokane. Forecasted spring and summer runoff is 60% of normal. This forecast is based upon a snowpack that is 68% of average and a water year to date precipitation value of 80% of normal. Precipitation for March was 162% of average. Storage in Coeur d' Alene Lake was 186,200 acre feet compared to 349,200 last year; average storage in Cd'A for April 1 is 234,300 acre feet. Maximum measured snowpack occurred at the Lost Lake snow course with 119 inches of snow and 44.6 inches of water content. Temperatures for Spokane for March were 4 degrees above normal.

For more information contact your local Soil Conservation Service office.

# SPOKANE RIVER BASIN

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR.	MOST	MOST	REAS.	REAS.	REAS.	REAS.
		AVG. (1000AF)	PROBABLE (1000AF)	PROBABLE (% AVG.)	MAX. (1000AF)	MAX. (% AVG.)	MIN. (1000AF)	MIN. (% AVG.)
SPOKANE at Post Falls	APR-SEP	2820.0	1690.0	60	2480.0	88	900.0	32
	APR-JUL	2723.0	1630.0	60	2392.0	88	868.0	32
SPOKANE at Long Lake	APR-JUL	3045.0	1830.0	60	2683.0	88	977.0	32

RESERVOIR STORAGE		(1000AF)		WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE I CAPACITY I	** USEABLE STORAGE **		WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF	
		THIS YEAR	LAST YEAR AVG.			LAST YR.	AVERAGE
COEUR D'ALENE	291.2	186.2	349.2	234.3	Spokane River	22	118 68

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

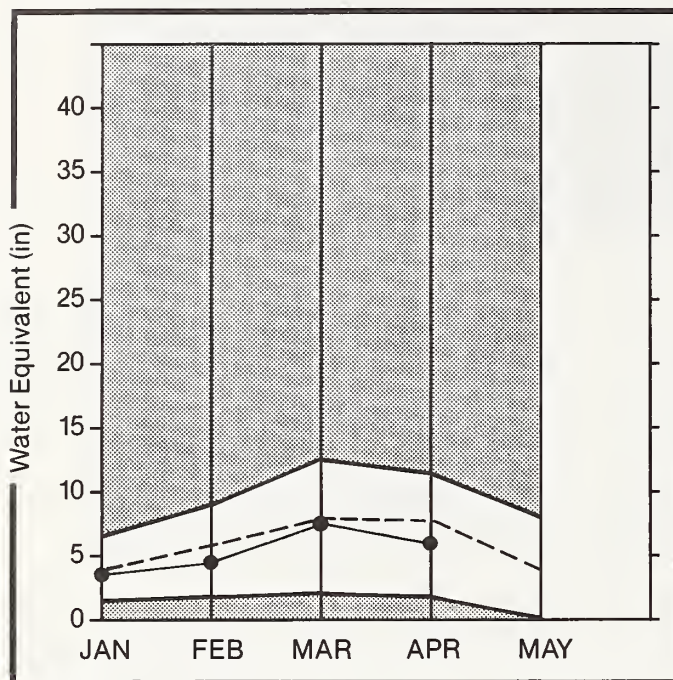
2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

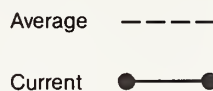
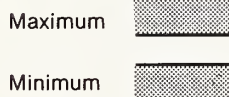


# COLVILLE AND PEND OREILLE

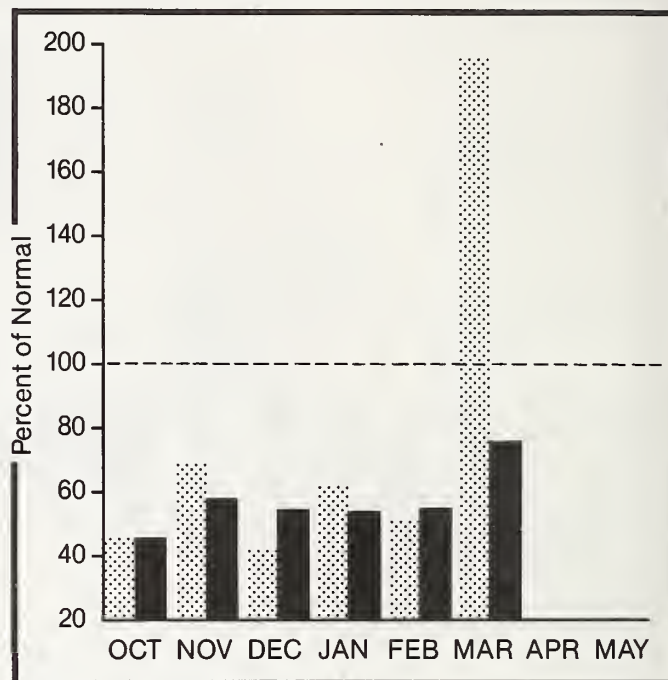
Mountain snowpack\* (inches)



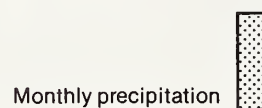
\*Based on selected stations



Precipitation\* (percent of normal)



\*Based on selected stations



Year to date precipitation 

## COLVILLE - PEND OREILLE RIVER BASINS

### WATER SUPPLY OUTLOOK:

Snow cover basin-wide is 73% of average. Maximum snowpack measurement for the basin was at Schweitzer Ridge with 111 inches of snow and 45.9 inches of water. Precipitation during March was 196% of average bringing the water year to date to 74% of normal. Streamflows for March were 113% of average on the Pend Oreille River, 179% on the Kettle River and 121% on the Columbia River below Grand Coulee. Forecasted Streamflows for the Pend Oreille River are 71%, Kettle River 69%, and the Colville River 68% of normal for the spring and summer runoff period. Snowpack measurements are at 73% of normal.

For more information contact your local Soil Conservation Service office.



# COLVILLE - PEND OREILLE RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
PEND OREILLE RIVER b1 Box Canyon 2	APR-SEP	15170.0	10700.0	71	13279.0	88	8121.0	54
	APR-JUL	13900.0	9810.0	71	12173.0	88	7447.0	54
	APR-JUN	11960.0	8490.0	71	10523.0	88	6457.0	54
CHAMOKANE CREEK	MAY-AUG	9.2	5.3	60	9.0	98	2.0	22
COLVILLE RIVER at Kettle Falls	APR-SEP	139.0	95.0	68	149.0	107	41.0	29
	APR-JUL	128.0	88.0	69	138.0	108	38.0	30
	APR-JUN	118.0	81.0	69	127.0	108	35.0	30
KETTLE RIVER nr Laurier	APR-SEP	1907.0	1320.0	69	1854.0	97	786.0	41
	APR-JUL	1807.0	1250.0	69	1756.0	97	744.0	41
	APR-JUN	1622.0	1120.0	69	1574.0	97	666.0	41
COLUMBIA RIVER at Birchbank 2	APR-SEP	44390.0	38500.0	87	43827.0	99	33173.0	75
	APR-JUL	35440.0	30700.0	87	34953.0	99	26447.0	75
	APR-JUN	25650.0	22320.0	87	25398.0	99	19242.0	75
COLUMBIA RIVER at Grand Coulee 2	APR-SEP	66460.0	53500.0	80	62140.0	93	44860.0	67
	APR-JUL	55730.0	44800.0	80	52045.0	93	37555.0	67
	APR-JUN	43420.0	34740.0	80	40385.0	93	29095.0	67

RESERVOIR STORAGE		(1000AF)			WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE CAPACITY	THIS YEAR	** USEABLE STORAGE ** LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE	
ROOSEVELT	5232.0	4535.2	4403.4	1586.0	Colville River	3	132	72
BANKS	715.0	648.0	381.3	583.0	Pend Oreille River	12	109	77
					Kettle River	10	95	63

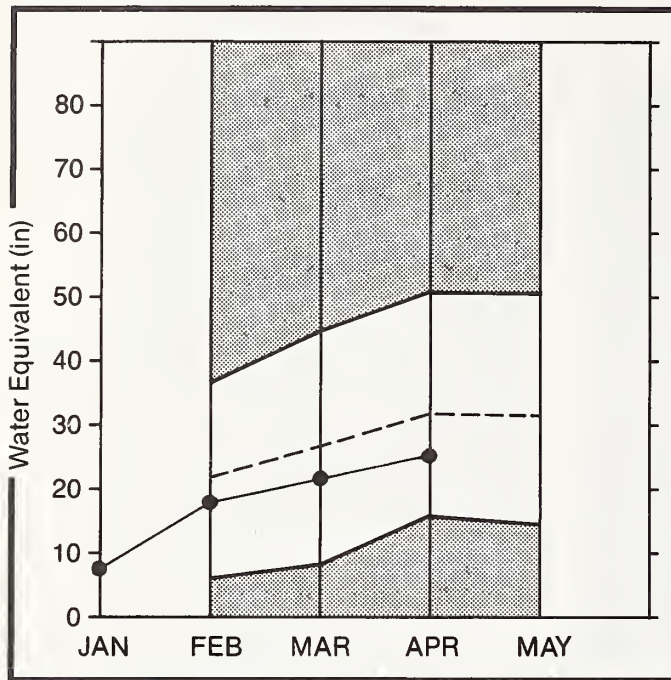
1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.





The average is computed for the 1961-85 base period.

# OKANOGAN AND METHOW

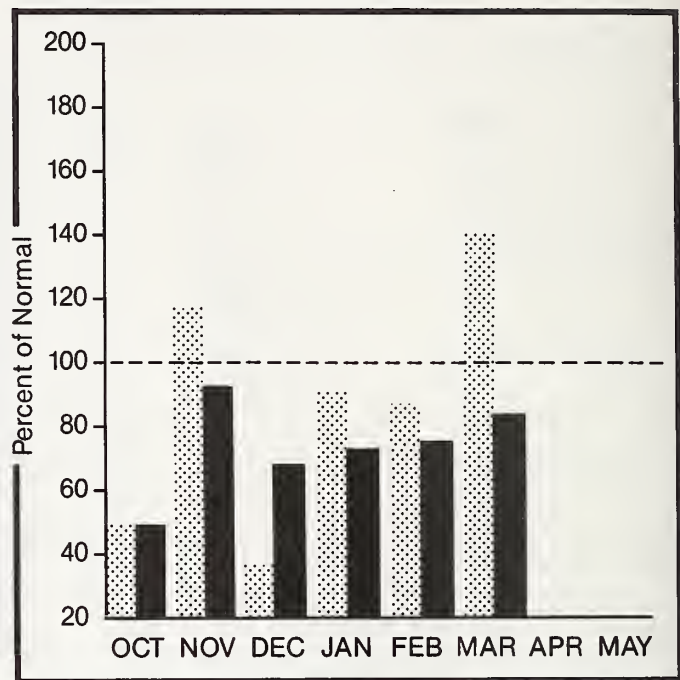
Mountain snowpack\* (inches)





\*Based on selected stations

Maximum  Average   
Minimum  Current 

Precipitation\* (percent of normal)



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

## OKANOGAN - METHOW RIVER BASINS

### WATER SUPPLY OUTLOOK:

The runoff forecast for the Okanogan River is 77% of normal and Similkameen River is 76% of normal; on the Methow River its 73%. Okanogan River streamflow was at 83% of average for March. Temperatures for March were 7 degrees above normal, continuing the early melt of the low elevation snow. Snow cover as of March 1 is 77% of average on the Okanogan-Methow Basin. Maximum snowwater at the measured courses occurred at Harts Pass with 45 inches of water content. March precipitation in the Okanogan was at 140% with water year to date 84% of average. Storage in the Conconully Reservoirs is at 14,900 acre feet which is 63% of capacity and 99% of April 1 average.

For more information contact your local Soil Conservation Service office.

# OKANOGAN - METHOW RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
SIMILKAMEEN R. nr Nighthawk	APR-SEP	1432.0	1090.0	76	1448.0	101	732.0	51
	APR-JUL	1333.0	1010.0	76	1343.0	101	677.0	51
	APR-JUN	1128.0	860.0	76	1142.0	101	578.0	51
OKANOGAN R. nr Tonasket	APR-SEP	1661.0	1270.0	76	1835.0	110	1220.0	73
	APR-JUL	1501.0	1150.0	77	1660.0	111	640.0	43
	APR-JUN	1255.0	970.0	77	1397.0	111	543.0	43
METHOW RIVER nr Pateros	APR-SEP	980.0	720.0	73	975.0	99	465.0	47
	APR-JUL	907.0	665.0	73	901.0	99	429.0	47
	APR-JUN	769.0	560.0	73	760.0	99	360.0	47

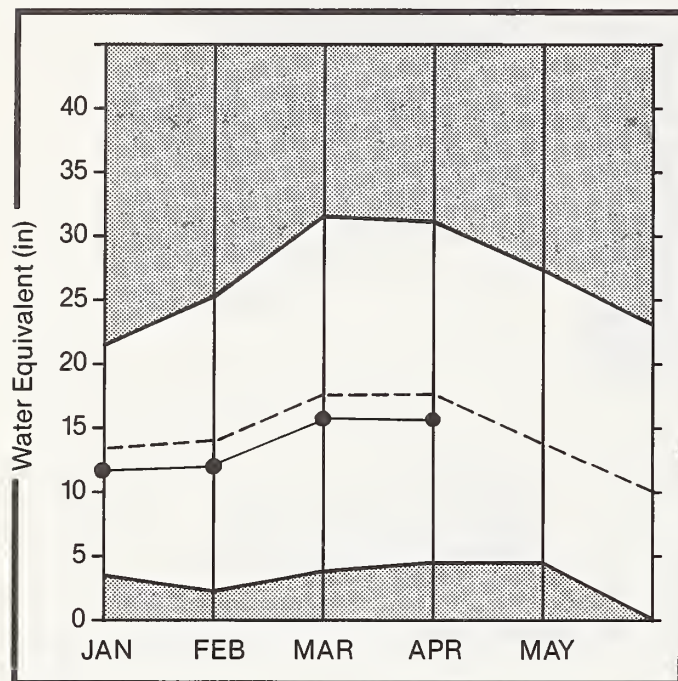
RESERVOIR STORAGE		(1000AF)			WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **	THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
CONCONULLY LAKE (SALMON)	10.5	7.8	8.0	8.0	8.0	Okanogan River	28	94 76
CONCONULLY RESERVOIR	13.0	7.1	7.3	7.0	7.0	Methow River	4	108 79

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.  
 2 - Corrected for upstream diversions or changes in reservoir storage.  
 The average is computed for the 1961-85 base period.



# WENATCHEE AND CHELAN

**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum



Average



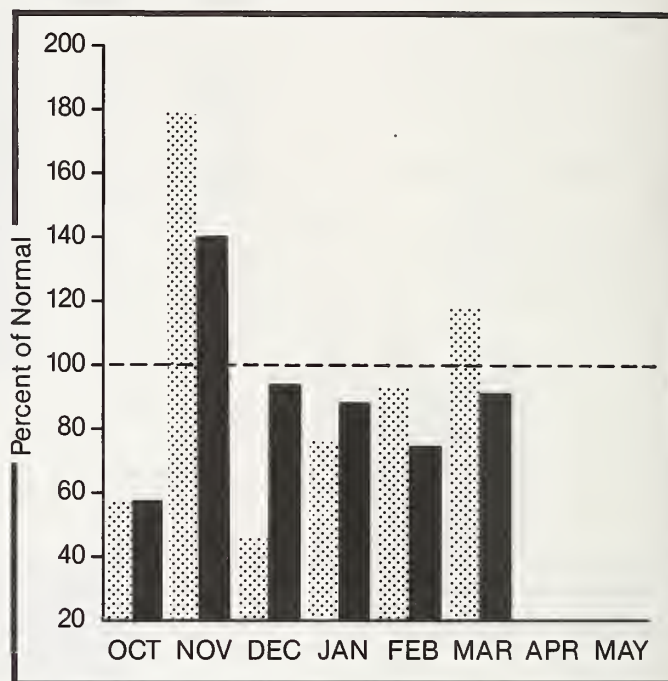
Minimum



Current



**Precipitation\*** (percent of normal)

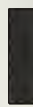


\*Based on selected stations

Monthly precipitation



Year to date precipitation



## WENATCHEE - CHELAN RIVER BASINS

### WATER SUPPLY OUTLOOK:

Runoff for the Wenatchee River is forecast to be 85% of normal. The runoff forecast is 82% in the Chelan Basin. Stehekin River runoff is forecast to be 82% of average. Stemilt and Icicle are forecast at 81%. March precipitation was 117% of normal in the basin and 90% for the water year to date. Reservoir storage in Lake Chelan is at 125,200 acre feet or 59% of April 1 average and 19% of capacity. March streamflows were 122% of normal for the Wenatchee River. Snowpack in the Wenatchee-Chelan Basin is at 88% of normal. Lyman Lake had the most snowwater with 55.6 inches as of April 1.

For more information contact your local Soil Conservation Service office.



# WENATCHEE - CHELAN RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
CHELAN RIVER at Chelan 1	APR-SEP	1184.0	945.0	82	1178.0	99	752.0	64
	APR-JUL	1040.0	845.0	81	1032.0	99	658.0	63
	APR-JUN	815.0	670.0	82	817.0	100	523.0	64
STEHEKIN R. at Stehekin	APR-SEP	844.0	690.0	82	783.0	93	597.0	71
	APR-JUL	714.0	585.0	82	664.0	93	506.0	71
	APR-JUN	541.0	445.0	82	505.0	93	385.0	71
ENTIAT RIVER nr Ardenvoir	APR-SEP	233.0	190.0	82	232.0	100	148.0	64
	APR-JUL	221.0	180.0	81	220.0	100	140.0	63
	APR-JUN	171.0	140.0	82	171.0	100	109.0	64
WENATCHEE RIVER at Plain	APR-SEP	1270.0	1080.0	85	1474.0	116	686.0	54
	APR-JUL	1113.0	950.0	85	1295.0	116	605.0	54
	APR-JUN	899.0	770.0	86	1049.0	117	491.0	55
STEMILT nr Wenatchee (miners in)	MAY-SEP	138.0	113.0	82	157.0	114	69.0	50
ICICLE CREEK nr Leavenworth	APR-SEP	370.0	300.0	81	418.0	113	182.0	49
	APR-JUL	340.0	270.0	79	379.0	111	161.0	47
	APR-JUN	270.0	220.0	81	306.0	113	134.0	50
COLUMBIA R. bl Rock Island Dam 2	APR-SEP	72250.0	58700.0	81	68093.0	94	49308.0	68
	APR-JUL	61050.0	49500.0	81	57437.0	94	41564.0	68
	APR-JUN	47730.0	38660.0	81	44865.0	94	32455.0	68

## RESERVOIR STORAGE (1000AF)

## WATERSHED SNOWPACK ANALYSIS

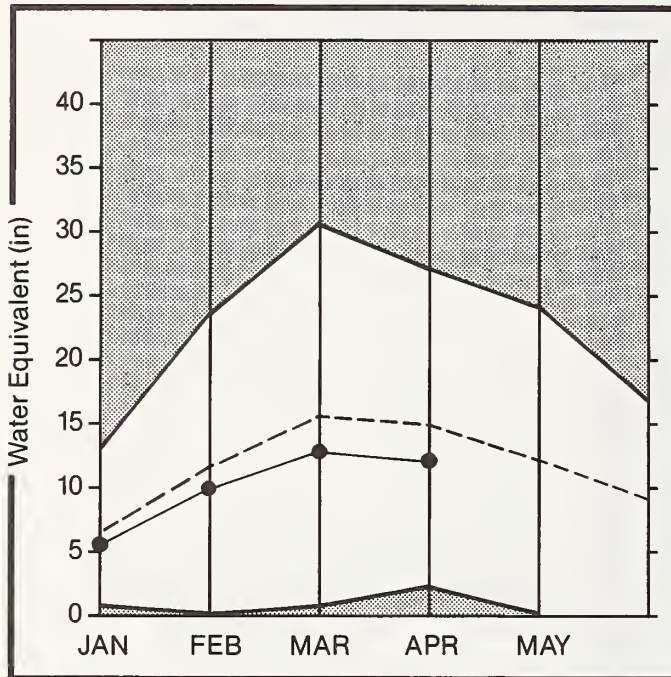
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF	
		THIS YEAR	LAST YEAR	AVG.			LAST YR.	AVERAGE
CHELAN LAKE	676.1	125.2	302.4	212.1	Chelan Lake Basin	6	107	89
					Entiat River	2	105	81
					Wenatchee River	7	128	87
					Colockum Creek	1	545	89
					Squilchuck Creek	1	62	56
					Stemilt Creek	2	59	48

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.  
The average is computed for the 1961-85 base period.

# YAKIMA

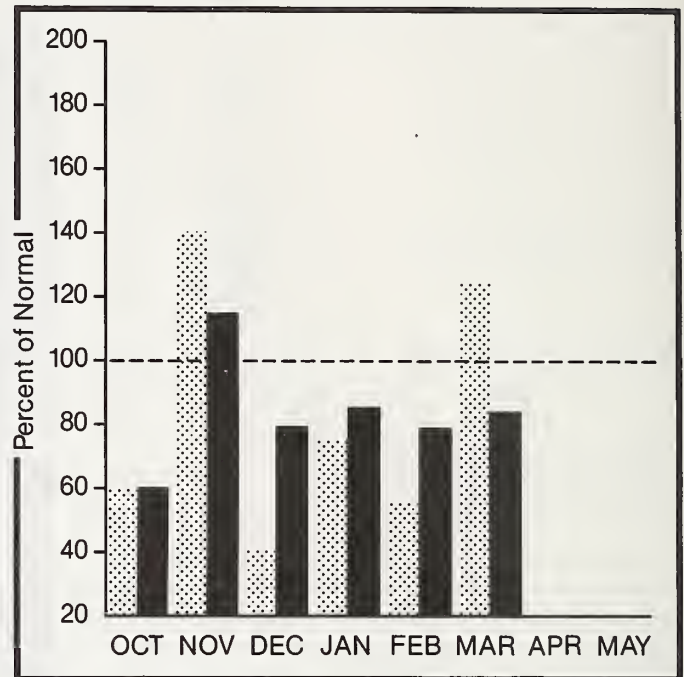
**Mountain snowpack\* (inches)**



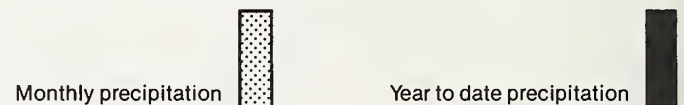
\*Based on selected stations



**Precipitation\* (percent of normal)**



\*Based on selected stations



## YAKIMA RIVER BASIN

### WATER SUPPLY OUTLOOK:

March streamflow for the Yakima Basin was 114% of normal. Reservoir storage is improved with April 1 values for the five major reservoirs at 524,800 acre feet or 71% of normal. Forecasts for the Yakima Basin runoff are slightly lower than last months. These vary throughout the basin as follows: the Yakima River at Cle Elum 77%, Naches River 80%, the Yakima River at Parker 77% and Ahtanum Creek 81%. Snowpack is 79% of average in the Yakima Basin based upon measurements at 16 snow courses; last month's was 83% of normal. March precipitation was 124% of normal and 83% for the water year to date. March temperatures were two degrees above average.

For more information contact your local Soil Conservation Service office.

# YAKIMA RIVER BASIN

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
YAKIMA RIVER at Martin 1	APR-SEP	136.0	105.0	77	119.0	88	91.0	67
	APR-JUL	126.0	97.0	77	110.0	87	84.0	67
	APR-JUN	112.0	87.0	78	98.0	88	76.0	68
YAKIMA RIVER at Cle Elum 2	APR-SEP	951.0	730.0	77	825.0	87	635.0	67
	APR-JUL	846.0	650.0	77	735.0	87	565.0	67
	APR-JUN	735.0	570.0	78	644.0	88	497.0	68
YAKIMA RIVER nr Parker 2	APR-SEP	2075.0	1600.0	77	1994.0	96	1206.0	58
	APR-JUL	1862.0	1440.0	77	1794.0	96	1086.0	58
	APR-JUN	1643.0	1270.0	77	1582.0	96	958.0	58
KACHESS RIVER nr Easton 1	APR-SEP	133.0	103.0	77	118.0	89	88.0	66
	APR-JUL	114.0	88.0	77	101.0	89	75.0	66
	APR-JUN	102.0	79.0	77	90.0	88	68.0	67
CLE ELUM RIVER nr Roslyn 1	APR-SEP	459.0	360.0	78	410.0	89	310.0	68
	APR-JUL	417.0	325.0	78	371.0	89	279.0	67
	APR-JUN	353.0	286.0	79	319.0	90	241.0	68
BUMPING RIVER nr Nile 1	APR-SEP	139.0	110.0	79	138.0	99	82.0	59
	APR-JUL	128.0	101.0	79	127.0	99	75.0	59
	APR-JUN	106.0	83.0	78	104.0	98	62.0	58
AMERICAN RIVER nr Nile	APR-SEP	121.0	98.0	81	110.0	91	86.0	71
	APR-JUL	112.0	91.0	81	102.0	91	80.0	71
	APR-JUN	94.0	76.0	81	85.0	90	67.0	71
TIETON RIVER at Tieton 1	APR-SEP	244.0	200.0	82	254.0	104	146.0	60
	APR-JUL	208.0	170.0	82	216.0	104	124.0	60
	APR-JUN	168.0	140.0	83	177.0	105	103.0	61
NACHES RIVER nr Naches 2	APR-SEP	860.0	690.0	80	862.0	100	518.0	60
	APR-JUL	779.0	625.0	80	781.0	100	469.0	60
	APR-JUN	667.0	540.0	81	673.0	101	407.0	61
AHTANUM CREEK nr Timpico 2	APR-SEP	47.0	38.0	81	55.0	117	21.0	45
	APR-JUL	43.0	35.0	81	50.0	116	20.0	47
	APR-JUN	37.0	30.0	81	43.0	116	17.0	46

RESERVOIR STORAGE		(1000AF)			WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **	THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
KEECHULUS	157.8	93.7	113.3	110.0		Yakima River	16	115 79
KACHESS	239.0	90.6	159.2	187.0		Ahtanum Creek	1	120 98
CLE ELEM	436.9	162.8	243.4	290.0				
BUMPING LAKE	33.7	25.0	12.6	11.0				
RIMROCK	198.0	152.7	149.1	142.0				

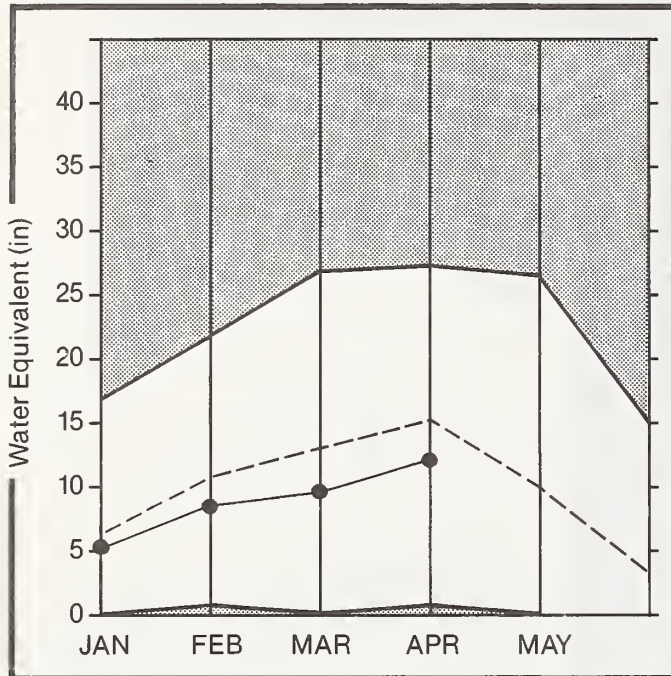
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The average is computed for the 1961-85 base period.







# WALLA WALLA

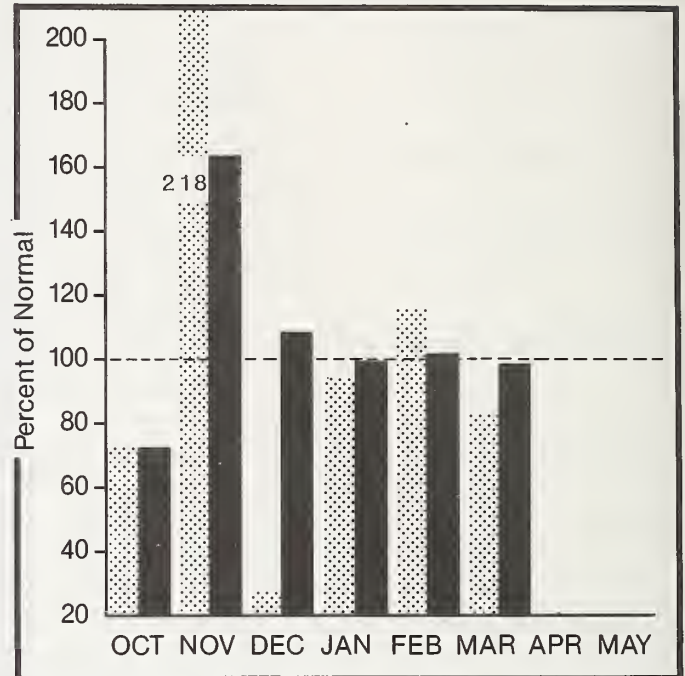
**Mountain snowpack\* (inches)**



\*Based on selected stations

Maximum  Average   
Minimum  Current 

**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

## WALLA WALLA RIVER BASIN

### WATER SUPPLY OUTLOOK:

March streamflow for the Walla Walla River was at 76% of normal. Streamflow in the Walla Walla Basin is Forecast 70% of average for the coming spring and summer down from 89% last month. March precipitation was 81% of average and the water year to date precipitation has been 98% of normal. Snowpack in the Walla Walla River Basin is 78% of normal, up from 73% for last month. March temperatures were four degree's above average. Water content at the Touchet SNOTEL site was at 29 inches as of April 1 compared to 23.1 inches last year.

For more information contact your local Soil Conservation Service office.



# WALLA WALLA RIVER BASIN

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
MILL CREEK at Walla Walla	APR-SEP	17.5	12.3	70	16.0	91	9.0	51
	APR-JUL	17.3	12.1	70	16.0	92	9.0	52
	APR-JUN	17.2	11.9	69	15.0	87	8.0	47
SF WALLA WALLA nr Milton Freewater	APR-JUL	55.0	38.0	69	47.0	85	29.0	53
COUSE CK nr Milton Freewater	APR-JUL	3.6	2.5	69	4.0	111	1.0	28
PINE CREEK nr Weston	APR-JUL	2.7	1.9	70	3.0	111	1.0	37
COLUMBIA R. at The Dalles 2	APR-SEP	101800.0	73800.0	72	87034.0	85	60566.0	59
	APR-JUL	87110.0	63000.0	72	74323.0	85	51677.0	59
	APR-JUN	70470.0	50740.0	72	59901.0	85	41579.0	59

RESERVOIR STORAGE		(1000AF)	WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR      LAST YEAR      AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.      AVERAGE
			Mill Creek	1	144      66

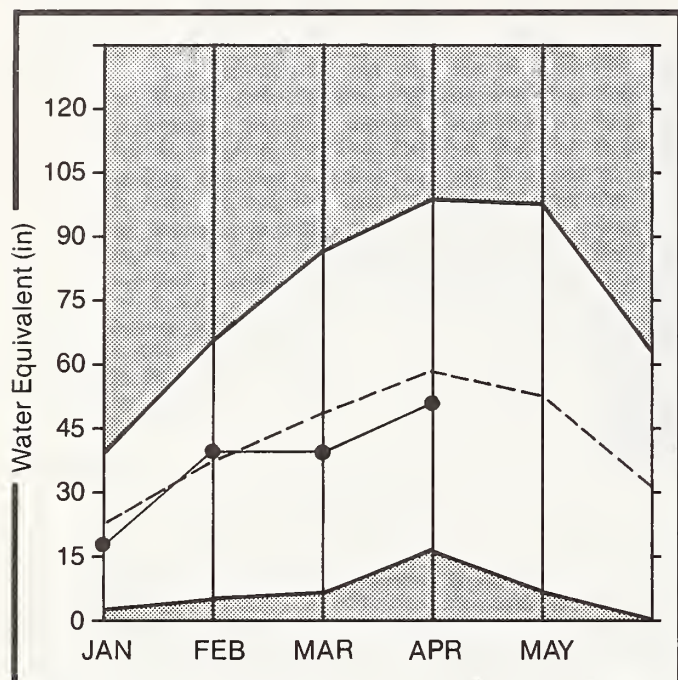
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2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

# COWLITZ AND LEWIS

**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum



Average



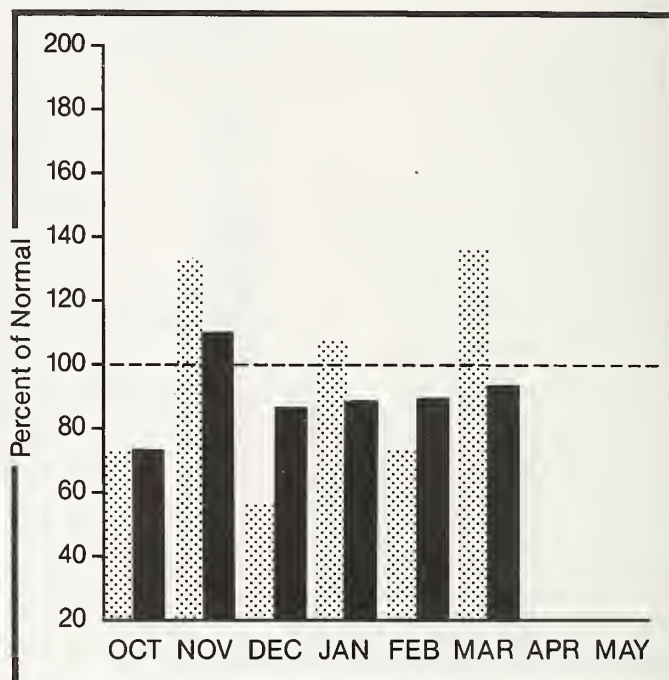
Minimum



Current



**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## COWLITZ - LEWIS RIVER BASINS

### WATER SUPPLY OUTLOOK:

March streamflow in the Cowlitz River was 161% of normal. Forecasts for the Lewis River is 89% and for the Cowlitz River 85%. April 1 snow cover for the Cowlitz-Lewis Basin is at 86% of normal. Maximum water content was noted at the Plains of Abraham SNOTEL site where the snowpack contained 89.8 inches of water on April 1 (data may be affected by drifting). March precipitation was 136% of normal bringing the water year to date precipitation to 94% of average.

For more information contact your local Soil Conservation Service office.

# COWLITZ - LEWIS RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
LEWIS RIVER at Ariel 2	APR-SEP	1244.0	1100.0	88	1436.0	115	764.0	61
	APR-JUL	1084.0	960.0	89	1253.0	116	667.0	62
	APR-JUN	958.0	850.0	89	1109.0	116	591.0	62
COWLITZ R. bl Mayfield Dam 2	APR-SEP	2036.0	1740.0	85	2534.0	124	946.0	46
	APR-JUL	1782.0	1520.0	85	2215.0	124	825.0	46
	APR-JUN	1524.0	1300.0	85	1894.0	124	706.0	46
COWLITZ R. at Castle Rock 2	APR-SEP	2687.0	2290.0	85	3257.0	121	1323.0	49
	APR-JUL	2343.0	2000.0	85	2843.0	121	1157.0	49
	APR-JUN	2015.0	1720.0	85	2445.0	121	995.0	49

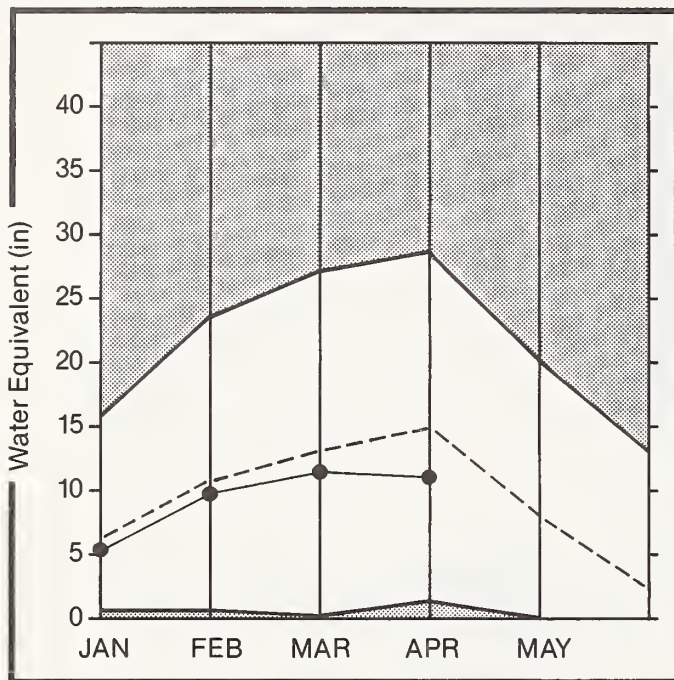
RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF
	1 YEAR	THIS YEAR	LAST YEAR	AVG.			LAST YR. AVERAGE
					Cowlitz River	2	118 76
					Lewis River	4	150 91

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.  
 2 - Corrected for upstream diversions or changes in reservoir storage.  
 The average is computed for the 1961-85 base period.



# WHITE - GREEN

**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum



Average



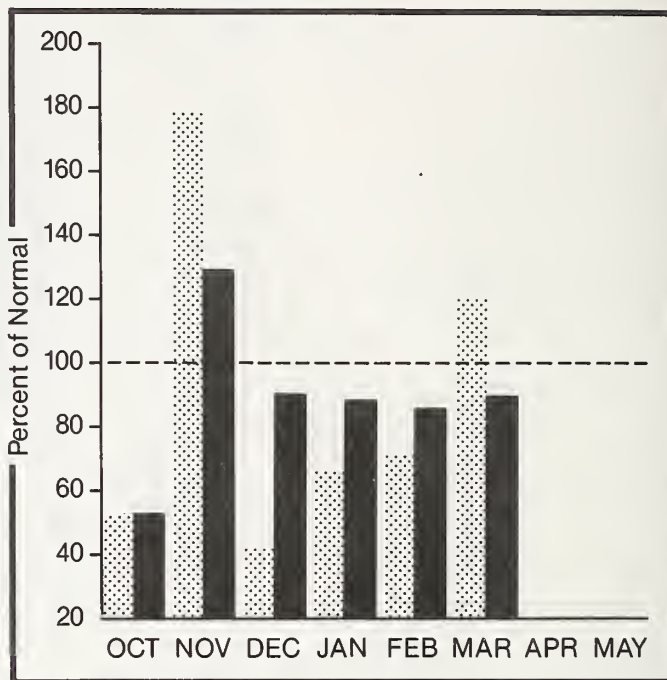
Minimum



Current



**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## WHITE - GREEN RIVER BASINS

### WATER SUPPLY OUTLOOK:

Summer runoff is forecasted to be 82% of normal on the Green River and 85% on the Cedar River. March runoff was near 150% of average. Snow depth at the Cayuse Pass snow course was 151 inches with 66.1 inches of water content on April 1. Temperatures for March averaged four degrees above normal resulting in a continuing melt of the low elevation snow. March precipitation was 120% of normal bringing the water year to date to 89% of average. Snowpack is 75% of normal for the basin.

For more information contact your local Soil Conservation Service office.



# WHITE - GREEN RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR.	MOST	MOST	REAS.	REAS.	REAS.	REAS.
		AVG. (1000AF)	PROBABLE (1000AF)	PROBABLE (% AVG.)	MAX. (1000AF)	MAX. (% AVG.)	MIN. (1000AF)	MIN. (% AVG.)
GREEN RIVER bl Howard Hanson Dam 2	APR-SEP	291.0	240.0	82	298.0	102	182.0	63
	APR-JUL	261.0	220.0	84	272.0	104	168.0	64
	APR-JUN	236.0	200.0	85	247.0	105	153.0	65
CEDAR RIVER nr Cedar Falls	APR-SEP	93.0	80.0	86	99.0	106	61.0	66

RESERVOIR STORAGE				WATERSHED SNOWPACK ANALYSIS			
(1000AF)							
RESERVOIR	USEABLE I	** USEABLE STORAGE **		WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF	
	CAPACITY I	THIS	LAST			LAST YR.	AVERAGE
	I	YEAR	YEAR				
				White River	3	119	87
				Green River	7	147	65

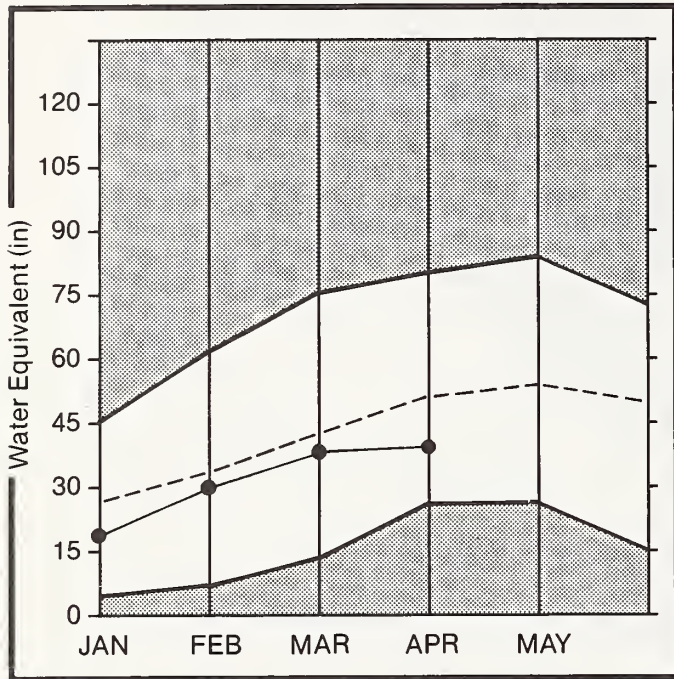
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# NORTH PUGET SOUND

Mountain snowpack\* (inches)



\*Based on selected stations

Maximum



Average



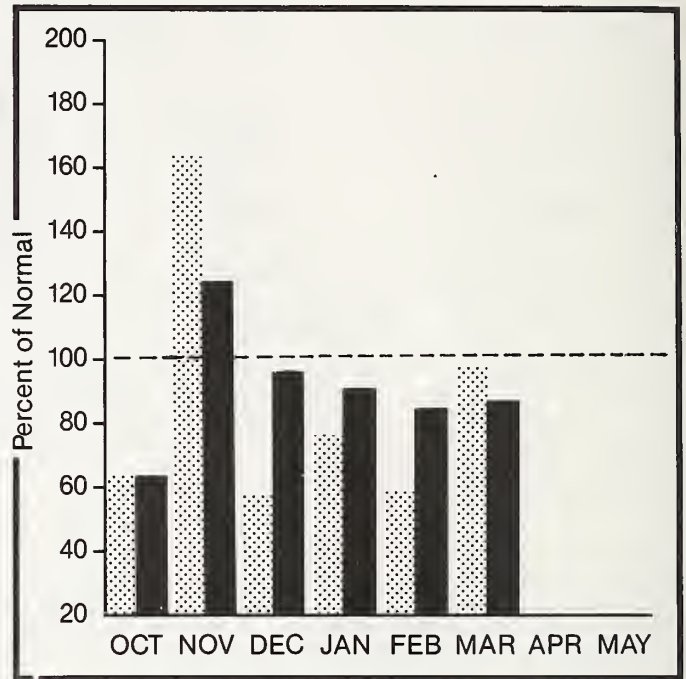
Minimum



Current



Precipitation\* (percent of normal)



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## NORTH PUGET SOUND RIVER BASINS

### WATER SUPPLY OUTLOOK:

Precipitation values for March were 97% of average with a water year to date at 86% of normal. Forecasted runoff for the Skagit River is 85% of normal. Reservoir storage is above average with Ross Lake storing 579,700 acre feet as of April 1; 41% of capacity. April 1 snowcover for the North Puget Basin is 76% of normal with Easy Pass snowcourse having 158 inches of snow and 71.1 inches of water content. Temperatures were five degrees above normal for March.

For more information contact your local Soil Conservation Service office.

# NORTH PUGET SOUND RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
SKAGIT RIVER at Newhalem 2	APR-SEP	2264.0	1930.0	85	2292.0	101	1568.0	69
	APR-JUL	1891.0	1600.0	85	1903.0	101	1297.0	69
	APR-JUN	1442.0	1230.0	85	1461.0	101	999.0	69

RESERVOIR STORAGE (1000AF)		WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR    LAST YEAR    AVG.	WATERSHED	NO. COURSES AVG'D    THIS YEAR AS % OF LAST YR.    AVERAGE
ROSS	1404.1	579.7    935.5    298.0	Skagit River	14    109    82
DIABLO RESERVOIR	90.6	85.7    88.3    ---	Baker River	9    126    74
GORGE RESERVOIR	9.8	7.8    7.7    ---	Cedar River	1    0    65
			Snoqualmie River	1    166    58
			Skykomish River	2    135    98

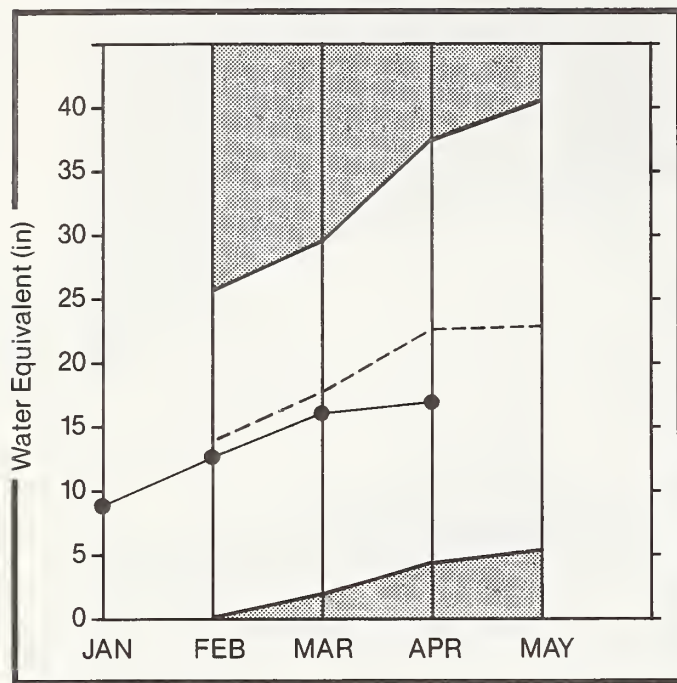
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# OLYMPIC

**Mountain snowpack\* (inches)**



\*Based on selected stations

Maximum



Average



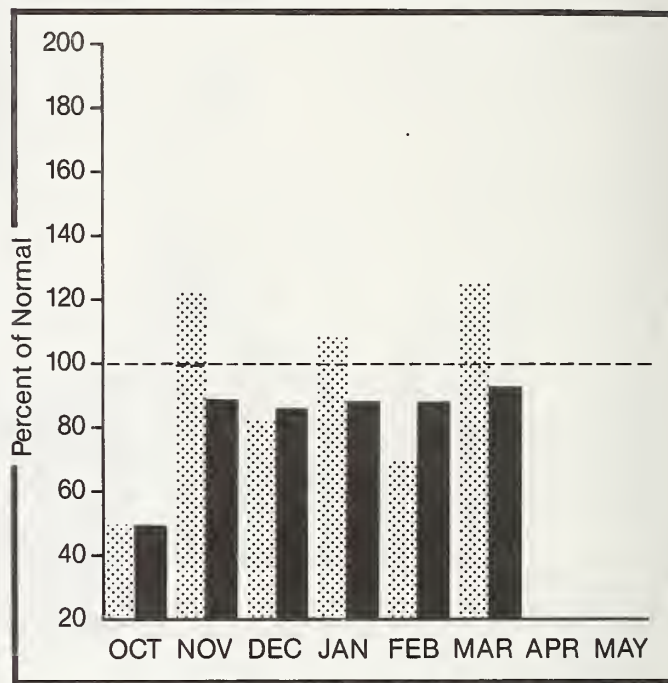
Minimum



Current



**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## OLYMPIC PENINSULA RIVER BASINS

### WATER SUPPLY OUTLOOK:

April 1 forecasts of runoff for streams in the basin are for 86% of average on the Dungeness River. Runoff forecast is 81% on the Elwah River. Snow cover is 75% of normal with Cox Valley snowcourse having 83 inches of snow and 36 inches of water content. March precipitation was 123% of average. The water year to date accumulation is 92% of normal. Temperatures in the basin were four degrees above average for March.

For more information contact your local Soil Conservation Service office.

# OLYMPIC PENINSULA RIVER BASINS

## STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
DUNGENESS RIVER nr Sequim	APR-SEP	159.0	136.0	86	161.0	101	111.0	70
	APR-JUL	129.0	110.0	85	131.0	102	89.0	69
	APR-JUN	97.0	83.0	86	99.0	102	67.0	69
ELWHA RIVER nr Port Angeles	APR-SEP	553.0	450.0	81	538.0	97	362.0	65
	APR-JUL	454.0	370.0	81	443.0	98	297.0	65

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
					Dungeness River	1	189 80
					Morse Creek	1	133 90
					Elwha River	1	250 69

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

# BASIN SUMMARY OF SNOW COURSE DATA APRIL 1987

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-85	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-85	
PENO OREILLE RIVER							COLOCUM CREEK							
16A02 IS NOT ON FILE							TROUGH #2	PILLW	5310	4/01/87	---	10.9E	2.0	12.2
16A03 IS NOT ON FILE							SOULCHUCK CREEK							
BOYER MOUNTAIN	5250	3/30/87	54	20.4	19.7	26.6	BEEHIVE SPRINGS	4400	3/28/87	11	4.2	6.8	7.5	
BUMCHGRASS MEADOWS	5000	3/30/87	66	24.2	17.4	30.4	STEMILT CREEK							
BUMCHGRASS MOWFOLLOW	5000	4/01/87	---	24.9	19.8	27.2	STEMILT SLIDE	5000	4/01/87	23	8.9	11.6	13.4	
CHEWALAH	4930	3/26/87	41	13.8	9.3	16.7	UPPER WHEELER	4400	4/01/87	5	1.7	6.4	8.5	
HEART LAKE TRAIL	4800	3/29/87	43	15.6	17.8	22.0	YAKIMA RIVER							
HOODOO BASIN	6050	3/29/87	102	39.2	46.8	51.8	BIG BOULDER CREEK	3200	3/26/87	41	16.1	13.0	18.0	
HOODOO CREEK	5900	3/29/87	89	34.2	39.2	47.8	BLEWETT PASS #2	4270	3/26/87	26	10.2	11.0	15.6	
15B02 IS NOT ON FILE							BLEWETT PASS#2PILLW	4270	4/01/87	---	13.5E	10.7	24.4	
NELSON CAN.	3100	3/30/87	27	10.9	8.2	15.5	BUMPING LAKE	3450	3/30/87	25	10.7	13.0	14.7	
16A06 IS NOT ON FILE							BUMPING LAKE (NEW)	3400	3/30/87	32	14.5	16.9	18.8	
16A05 IS NOT ON FILE							CAYUSE PASS	5300	3/31/87	151	66.1	51.8	85.1	
COLVILLE RIVER							COLOCUM PASS	5370	3/31/87	33	12.1	18.4	17.0	
BAIRO	3220	3/27/87	9	3.5	.5	5.6	CORRAL PASS	6000	4/01/87	---	33.3S	33.1	37.8	
CHEWALAH	4930	3/26/87	41	13.8	9.3	16.7	20E04 IS NOT ON FILE							
TOGO	3370	3/26/87	20	6.9	8.5	11.3	FISH LAKE	3370	4/01/87	---	29.3S	22.6	36.0	
KETTLE RIVER							GREEN LAKE	6000	3/26/87	63	24.6	32.1	34.7	
BARNES CREEK CAN.	5300	3/25/87	43	12.6	13.5	20.6	GREEN LAKE	6000	4/01/87	---	20.6S	17.2	21.1	
BIG WHITE MTN CAN.	5510	3/28/87	48	15.2	16.7	19.4	GROUSE CAMP	5380	3/30/87	39	16.0	13.2	17.4	
BUTTE CREEK	4070	3/26/87	22	5.9	5.8	9.6	GROUSE CAMP	5380	4/01/87	---	21.2E	17.2	18.4	
CARRI CAN.	4100	3/28/87	9	2.7	3.6	6.4	LAKE CLE ELUM	5200	3/27/87	0	.0	.0	4.9	
FARRON CAN.	4000	3/30/87	27	10.0	10.2	13.9	MORSE LAKE	5400	4/01/87	---	52.1S	42.8	51.2	
COAT CREEK	3600	3/26/87	4	1.2	.0	4.8	OLALLIE MEADOWS	3630	3/27/87	62	26.5	16.0	45.5	
MONASHEE PASS CAN.	4500	3/25/87	28	8.1	8.9	14.0	STAMPEDE PASS PILLW	3840	4/01/87	---	40.7E	34.6	53.6	
SUMMIT G.S.	4600	3/26/87	22	5.2	6.2	8.4	SASSE RIDGE	4200	4/01/87	---	28.0S	13.8	34.9	
TRAPPING CK LOM CAN.	3050	3/28/87	1	.3	.0	3.5	TUNNEL AVENUE	2450	3/27/87	43	17.3	14.0	21.7	
TRAPPING CK UP CAN.	4460	3/28/87	16	5.3	5.7	9.8	WHITE PASS E.S.	4500	3/31/87	45	16.9	17.3	24.4	
OMAK LAKE, TWIN LAKES							WHITE PASS ES PILLW	4500	4/01/87	---	17.4S	18.8	25.3	
SPOKANE RIVER							ANTANUM CREEK							
ABOVE BURKE	4100	3/31/87	38	13.6	15.1	22.4	GREEN LAKE	6000	4/01/87	---	20.6S	17.2	21.1	
FOURTH OF JULY SUM	3200	3/31/87	0	.0	.0	7.3	MILL CREEK							
LOOKOUT	5140	3/31/87	55	25.0	26.2	35.1	NIGH RIDGE	4980	4/01/87	---	19.5S	13.5	29.7	
LOST LAKE	6110	3/27/87	119	44.6	43.3	59.3	TOUCHET #2	5530	4/01/87	---	29.0	23.1	---	
MOSQUITO RIDGE	5200	3/30/87	7	30.2	21.6	38.2	LEWIS AND COWLITZ RIVERS							
SHEPHERD	3200	4/01/87	15	4.8	6.5	12.1	CAYUSE PASS	5300	3/31/87	151	66.1	51.8	85.1	
SUNSET	5540	3/30/87	61	21.4	17.8	33.5	WHITE PASS E.S.	4500	3/31/87	45	16.9	17.3	24.4	
NEWMAN LAKE							WHITE PASS ES PILLW	4500	4/01/87	---	17.4S	18.8	25.3	
RAGGED RIDGE	3330	3/30/87	0	.0	.0	---	WHITE RIVER							
OKANOGAN RIVER							CAYUSE PASS	5300	3/31/87	151	66.1	51.8	85.1	
ABERDEEN LAKE CAN.	4300	3/31/87	6	2.0	4.8	6.1	CORRAL PASS	6000	3/27/87	89	34.5	30.4	40.9	
BLACKHALL PEAK CAN.	6370	3/31/87	76	32.7	32.7	33.8	CORRAL PASS	6000	4/01/87	---	33.3S	33.1	37.8	
BRENDA HINE CAN.	4800	3/30/87	34	8.8	11.3	13.0	MORSE LAKE	5400	4/01/87	---	52.1S	42.8	51.2	
BROCKMERE CAN.	3200	3/30/87	29	8.7	5.9	8.6	GREEN RIVER							
ENDERBY CAN.	6200	3/31/87	89	37.4	40.2	38.6	COUGAR MTN. PILLW	3200	4/01/87	---	15.1S	5.0	27.4	
ESPERON CK. LO CAN.	4400	3/29/87	24	7.9	8.0	12.0	GRASS MOUNTAIN #2	2900	3/31/87	12	4.2	.0	18.4	
ESPERON CK. MID CAN.	4690	3/29/87	35	11.2	10.7	15.5	LESTER CREEK	3100	3/31/87	43	16.2	15.2	23.8	
ESPERON CK. UP CAN.	5410	3/29/87	38	12.0	12.6	18.7	LYNN LAKE	4000	3/31/87	35	15.3	7.1	26.7	
GREYBACK RES CAN.	5120	3/30/87	22	5.5	8.3	9.1	SAWILL RIDGE	4700	3/31/87	56	23.0	16.0	37.4	
HAMILTON HILL CAN.	4890	3/27/87	34	11.2	11.4	15.1	STAMPEDE PASS PILLW	3840	4/01/87	---	40.7E	34.6	53.6	
HARTS PASS PILLW	6500	4/01/87	---	45.0S	46.2	53.9	TWIN CAMP	4100	3/31/87	55	23.2	15.6	25.0	
ISINTOK LAKE CAN.	5500	3/29/87	22	4.3	6.1	7.6	GREEN RIVER							
LOST HORSE MTN CAN.	6300	4/02/87	27	6.8	9.0	9.5	COUGAR MTN. PILLW	3200	4/01/87	---	15.1S	5.0	27.4	
MCCULLOCH CAN.	4200	3/30/87	7	2.4	3.2	6.7	GRASS MOUNTAIN #2	2900	3/31/87	12	4.2	.0	18.4	
MISSEZULA MTN CAN.	5090	3/26/87	30	7.7	9.1	9.4	LESTER CREEK	3100	3/31/87	43	16.2	15.2	23.8	
MISSION CREEK CAN.	5800	3/31/87	42	13.4	18.1	20.4	LYNN LAKE	4000	3/31/87	35	15.3	7.1	26.7	
MONASHEE PASS CAN.	4500	3/25/87	28	8.1	8.9	14.0	SAWILL RIDGE	4700	3/31/87	56	23.0	16.0	37.4	
MT. KOBAR CAN.	5900	3/29/87	33	9.8	10.2	12.9	STAMPEDE PASS PILLW	3840	4/01/87	---	40.7E	34.6	53.6	
HUTTON CREEK #1	5700	3/30/87	39	12.0	8.0	13.6	TWIN CAMP	4100	3/31/87	55	23.2	15.6	25.0	
OYAMA LAKE CAN.	4400	3/28/87	11	3.3	4.2	7.0	CEDAR RIVER							
POSTILL LAKE CAN.	4500	3/30/87	18	5.6	6.5	9.0	MT. GARDNER	3300	3/27/87	25	9.6	.0	15.0	
RUSTY CREEK	4000	3/30/87	10	3.7	3.0	6.4	SNODUALMIE RIVER							
SALMON MEADOWS	4500	3/30/87	24	8.5	3.8	10.0	OLALLIE MEADOWS	3630	3/27/87	62	26.5	16.0	45.5	
SALMON HDMS PILLW	4500	4/01/87	---	8.5S	6.8	13.9	SKYKOMISH RIVER							
SILVER STAR MTN CAN.	6000	3/29/87	64	24.5	27.2	29.2	STEVENS PASS PILLW	4070	4/01/87	---	43.3S	33.3	43.0	
SUMMERLAND RES CAN.	4200	3/29/87	22	4.2	8.2	9.5	STEVENS PASS SAND SD	3700	3/30/87	75	32.5	22.7	34.6	
SUNDAY SUMMIT CAN.	4300	3/28/87	12	3.9	2.1	4.7	SKAGIT RIVER							
TROUT CREEK CAN.	4690	3/24/87	18	5.6	5.8	7.2	BEAVER CREEK TRAIL	2200	3/27/87	21	8.8	6.1	12.2	
VASEUX CREEK CAN.	4600	3/31/87	11	3.2	5.9	6.6	BEAVER PASS	3680	3/26/87	65	26.6	21.6	30.4	
WHITE ROCKS MTN CAN.	6000	3/30/87	57	21.1	16.7	23.9	BROWN TOP	6000	3/26/87	139	54.4	57.6	60.8	
METHON RIVER							DEVILS PARK	5900	3/26/87	101	37.0	41.4	43.6	
HARTS PASS PILLW	6500	4/01/87	---	45.0S	46.2	53.9	FREEZEOUT CK. TRAIL	3500	3/27/87	31	11.2	7.1	11.7	
HUTTON CREEK #1	5700	3/30/87	39	12.0	8.0	13.6	GRANITE CREEK	3500	3/26/87	35	12.2	11.2	17.8	
RUSTY CREEK	4000	3/30/87	10	3.7	3.0	6.4	HARTS PASS PILLW	6500	4/01/87	---	45.0S	46.2	53.9	
SALMON MEADOWS	4500	3/30/87	24	8.5	3.8	10.0	KLESILWA CAN.	3710	3/27/87	18	7.8	2.1	12.4	
SALMON HDMS PILLW	4500	4/01/87	---	8.5S	6.8	13.9	LIGHTNING LAKE CAN.	4000	3/28/87	34	11.2	8.3	12.7	
CHELAN LAKE BASIN							LYMAN LAKE	5900	4/01/87	---	55.6E	50.1	64.3	
CLOUDY PASS	AM	6500	3/27/87	98	39.4	36.8	MEADOWS CABIN	1900	3/26/87	0	.0	.0	5.1	
LYMAN LAKE PILLW	5900	4/01/87	---	55.6E	50.1	64.3	NEW HOZOEEN LAKE	2800	3/27/87	23	7.8	6.2	11.0	
LITTLE HDMS	AM	5280	3/27/87	92	37.3	34.9	FATNY PASS PILLW	4780	4/01/87	---	32.6S	35.7	46.3	
MIRKOR LAKE PILLW	5600	4/01/87	---	36.8S	29.3	32.8	THUNDER BASIN	2400	3/26/87	50	21.4	11.4	22.0	
PARK CK RIDGE PILLW	4600	4/01/87	---	44.3E	42.5	44.8	BAKER RIVER							
RAINY PASS PILLW	4780	4/01/87	---	32.6S	35.7	46.3	DOCK BUTTE	AM	3800	3/30/87	102	45.9	36.0	67.7
ENTIAT RIVER							EASY PASS	AM	5200	3/30/87	158	71.1	56.0	85.2
BRIEF	1600	3/28/87	0	.0	.0	2.9	JASPER PASS	AM	5400					



## CONSERVE YOUR IRRIGATION WATER

Can irrigators use less water and get good yields? We think so. With energy costs on an upward spiral and water shortages likely, we offer these water saving ideas to irrigators.

Consider ditch lining or gated pipe. This will reduce the 10-90% loss which occurs in earth ditches.

Keep ditches clean and free from weeds, sediment or other debris, which can slow water velocity, affect delivery rate, and increase evaporation.

Make sure head gates, drop structures, and pipe inlets are operational. A washed out structure is water lost.

Inspect ditch banks for rodent damage. Rodent holes cause leakage or failures.

Make sure sprinkler nozzles are not worn or leaky. Check pipe connections and valves to prevent leaks.

Operate sprinklers at recommended pressure to effectively use available water.

Maintain your pump at peak efficiency to save energy.

### BETTER WATER MANAGEMENT

Better water management may require more labor. It may require changing a head of water in the middle of the night. But it will be worth it. You should:

Measure your water to determine how much is applied.

Consider alternate row irrigation for crops planted in furrows.

Plan short runs. Match stream size and velocity to soil intake rate and capacity.

Catch and reuse tail water where possible.

Under irrigate the lower end of the field to stretch your water.

When water is short, consider eliminating that last irrigation.

Soil Conservation Service personnel can:

Help plan and design new irrigation systems or evaluate existing ones. Provide technical assistance for land leveling, pipeline installation, and other practices.

### KNOW YOUR SOILS

Soil absorbs irrigation water at a given rate. This varies with each soil type. Some crops require more water than others. Check soil moisture by spade, probe, or moisture meter. Or use the "feel" method.

### WHEN IRRIGATION IS NEEDED SOIL WILL FEEL AND ACT THIS WAY

Soil Texture	A handful of soil will
Coarse	Tend to stick together slightly, but will not form a ball
Medium	Be crumbly, but will form a ball
Fine	be pliable, and will form a ball.

If you have a conservation plan on your farm, or if the soil in your area has been mapped, the Soil Conservation Service can crosscheck soil type and irrigation data and provide you with the water holding capacity of your soil for a given crop.



## The Following Organizations Cooperate With The Soil Conservation Service In Snow Survey Work

- Canada:** Ministry of the Environment, Water  
Investigations Branch, Victoria, British Columbia
- States:** Washington State Department of Ecology  
Washington State Department of Natural Resources
- Federal:** Department of the Army  
Corps of Engineers  
U.S. Department of Agriculture  
Forest Service  
U.S. Department of Commerce  
NOAA, National Weather Service  
U.S. Department of the Interior  
Bonneville Power Administration  
Bureau of Reclamation  
Geological Survey  
National Park Service  
Bureau of Indian Affairs
- Local:** City of Tacoma  
City of Seattle  
Chelan County P.U.D.  
Pacific Power and Light Company  
Puget Sound Power and Light Company  
Washington Water Power Company  
Snohomish County P.U.D.  
Colville Confederated Tribes
- Private:** Okanogan Irrigation District  
Wenatchee Heights Irrigation District  
Newman Lake Homeowners Association

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.



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